In The Claims

Kindly enter the claim amendments, without prejudice, as set forth below. A complete listing of the claims is provided, with a parenthetical indication of the status of each claim, and markings to show current changes.

1. (previously presented) A system for the cross-correlation of data, comprising:

a plurality n of computers PCi, n being a real number which is equal to or greater than 2, and i being an integer from 0 to n-1;

wherein said plurality n of computers PCi are communicably coupled via a connector with a switch;

each of said plurality n of computers PCi further including a storage device configured for storing data Xi;

data Xi being divisible into n partial data units Xi(j), j being an integer from 0 to n-1;

data Xi being divisible into n partial data units Xi(k), k being an integer from 0 to n-1;

a computer PCk, wherein computer PCk is configured for cross-correlation processing of partial data Xi(k);

wherein each computer PCi of said plurality n is configured for a first exchange of a partial data unit with a partner computer chosen from said plurality n of computers, so that no more than one computer PCi is idle during said first exchange; and

wherein each computer PCi of said plurality n is configured for an additional exchange of additional partial data units with a partner computer chosen from said plurality n of computers, so that no more than one computer PCi is idle during said additional exchange.

2. (previously presented) The system of claim 1, wherein each computer PCi of said plurality n is configured to exchange with a partner computer n-1 partial data units when n is even, and n partial data units when n is odd.

3. (previously presented) A system for the cross-correlation of data, comprising:

a plurality n of computers PCi, n being a real number which is equal to or greater than 2,

and i being an integer from 0 to n-1;

wherein said plurality n of computers PCi are communicably coupled via a connector configured for full duplex transmission and configured for a switching function;

each of said plurality n of computers PCi further including a storage device configured for storing data Xi;

data Xi being divisible into n partial data units Xi(j), j being an integer from 0 to n-1;

data Xi being divisible into n partial data units Xi(k), k being an integer from 0 to n-1;

a computer PCk, wherein computer PCk is configured for cross-correlation processing of partial data Xi(k);

wherein each computer PCi of said plurality n is configured for partner exchange of n-1 partial data units with a partner computer, so that no more than one computer PCi is left idle during the partner exchange; and

wherein each computer PCi of said plurality is configured to exchange partial data units with each partner computer once.

4. (previously presented) A system for the cross-correlation of data, comprising:

a plurality n of computers PCi, n being a real number which is equal to or greater than 2, and i being an integer from 0 to n-1;

wherein said plurality n of computers PCi are communicably coupled via a connector with a switch;

each of said plurality n of computers PCi further including a storage device configured for storing data Xi;

data Xi being divisible into n partial data units Xi(m), m being an integer from 0 to n-1;

data Xi being divisible into n partial data units Xi(k), k being an integer from 0 to n-1;

a computer PCk, wherein computer PCk is configured for cross-correlation processing of partial data Xi(k);

wherein each computer PCi of said plurality n is configured for partner exchange of a partial data unit with a partner computer chosen from said plurality n of computers, so that no more than one computer is left idle during the partner exchange; and

wherein each computer PCi of said plurality n is configured to exchange additional partial data units with a partner computer chosen from said plurality n of computers.

5. (previously presented) The system of claim 4, comprising an α turn, α being an integer of 0 and more, wherein the α turn includes partial data units, numbering from n xα to (n xα+n-1), and comprising partial data unit Xi(k+ n x α), the partial data unit Xi(k+ n x α) being located on each computer PCi, wherein the computer PCk is configured for the cross correlation processing of partial data unit Xi(k+ n x α).

6. (previously presented) A system according to claims 4 or 5,

wherein each computer PCi of said plurality n is configured for partner exchange of n-1 partial data units with a partner computer, so that no computer is left idle, when n is an even number;

wherein each computer PCi of said plurality n is configured for partner exchange of n partial data units with a partner computer, so that no more than one computer is left idle, when n is an odd number; and

wherein each computer PCi of said plurality is configured to exchange partial data units with each partner computer once.

7. (previously presented) A system for the cross-correlation of data, comprising:

a plurality n of computers PCi, n being a real number which is equal to or greater than 2, and i being an integer from 0 to n-1;

wherein said plurality n of computers PCi are communicably coupled via a connector with a switch;

each of said plurality n of computers PCi further including a storage device configured for storing data Xi;

data Xi being divisible into n partial data units Xi(m), m being an integer from 0 to n-1;

data Xi being divisible into n partial data units Xi(k), k being an integer from 0 to n-1;

a computer PCk, wherein computer PCk is configured for cross-correlation processing of

partial data Xi(k);

wherein each computer PCi of said plurality n is configured for partner exchange of a partial data unit with a partner computer chosen from said plurality n of computers, so that no more than one computer PCi is left idle during the partner exchange;

wherein each computer PCi of said plurality n is configured to exchange n-1 partial data units with a partner computer; and

wherein each computer PCi of said plurality is configured to exchange partial data units with each partner computer once.

8. (previously presented) A system as in any one of the preceding claims, in which the computers PCi of said plurality n are general purpose computers.

9. (previously presented) A system as in any one of the preceding claims, comprising a network medium configured for full duplex communications.

10. (previously presented) A system as in any one of the preceding claims, in which said data are time series data recorded from radio telescopes.

11. (previously presented) A system for the cross-correlation of data, comprising:

a plurality n of computers PCi, n being a real number which is equal to greater than 2, and i being an integer from 0 to n-1;

wherein said plurality n of computers PCi are communicably coupled via a connector with a switch;

each of said plurality n of computers PCi further including a storage device configured for storing data Xi;

data Xi being divisible into n partial data units Xi(j), j being an integer from 0 to n-1;

data Xi being divisible into n partial data units Xi(k), k being an integer from 0 to n-1;

a computer PCk, wherein computer PCk is configured for cross-correlation processing of partial data Xi(k); and

wherein each computer PCi of said plurality n is configured for partner exchange of a partial data unit with a partner computer chosen from said plurality n of computers, so that no more than one computer PCi is left idle during the partner exchange.

12. (previously presented) A system for the cross-correlation of data, comprising:

a plurality n of computers PCi, n being a real number which is equal to or greater than 2, and i being an integer from 0 to n-1;

wherein said plurality n of computers PCi are communicably coupled via a connector with a switch;

each of said plurality n of computers PCi further including a storage device configured for storing data Xi;

data Xi being divisible into n partial data units Xi(m), m being an integer from 0 to n-1;

data Xi being divisible into n partial data units Xi(k), k being an integer from 0 to n-1;

a computer PCk, wherein computer PCk is configured for cross-correlation processing of partial data Xi(k); and

wherein each computer PCi of said plurality n is configured for partner exchange of a partial data unit with a partner computer chosen from said plurality n of computers, so that no more than one computer PCi is left idle during the partner exchange.

13. (previously presented) A system for the cross-correlation of data, comprising:

a plurality n of computers PCi, n being a real number which is equal to or greater than 2, and i being an integer from 0 to n-1;

wherein said plurality n of computers PCi are communicably coupled via a connector with a switch;

each of said plurality n of computers PCi further including a storage device configured for storing data Xi;

data Xi being divisible into n partial data units Xi(j), j being an integer from 0 to n-1;

data Xi being divisible into n partial data units Xi(k), k being an integer from 0 to n-1;

a computer PCk, wherein computer PCk is configured for cross-correlation processing of

partial data Xi(k);

wherein each computer PCi of said plurality n is configured for partner exchange of a partial data unit with a partner computer chosen from said plurality n of computers, so that no more than one computer PCi is left idle during the partner exchange; and

wherein each computer PCi of said plurality n is configured to exchange n-1 partial data units with a partner computer; and

wherein each computer PCi of said plurality is configured to exchange partial data units with each partner computer once.

14. (previously presented) A system for the cross-correlation of data, comprising:

a plurality n of computers PCi, n being a real number which is equal to or greater than 2, and i being an integer from 0 to n-1;

wherein said plurality n of computers PCi are communicably coupled via a connector with a switch;

each of said plurality n of computers PCi further including a storage device configured for storing data Xi;

data Xi being divisible into n partial data units Xi(j), j being an integer from 0 to n-1;

data Xi being divisible into n partial data units Xi(k), k being an integer from 0 to n-1;

a computer PCk, wherein computer PCk is configured for cross-correlation processing of partial data Xi(k);

wherein each computer PCi of said plurality n is configured for partner exchange of a partial data unit with a partner computer chosen from said plurality n of computers, so that no more than one computer PCi is left idle during the partner exchange;

wherein each computer PCi of said plurality n is configured to exchange n-1 partial data units with a partner computer; and

wherein each computer PCi of said plurality is configured to exchange partial data units with each partner computer once.

15. (previously presented) A system as in one of claims 11-14, comprising a network

medium configured for full duplex communications.

16. (previously presented) The system of claim 1, wherein n is an odd number.

17. (previously presented) The system of claim 1, wherein $n = 2^K + 1$, wherein k is an integer greater than 0.

18. (previously presented) The system of claim 1, wherein $n = 2^K - 1$, wherein k is an integer greater than 0.

19. (new) The system of claim 1, wherein each partial data unit is exchanged only once.

20. (new) The system of claim 1, wherein in each data exchange, the volume of the data exchanged remains constant.